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(54) Title: **GENE FOR INCREASED SOMATIC RECOMBINATION**

(57) Abstract: The present invention relates to nucleic acids encoding polypeptides involved in homologous recombination, as well as vectors and host cells comprising the nucleic acids and polypeptides encoded by the nucleic acids. Also provided are methods for inducing somatic and/or meiotic homologous recombination in a cell, comprising modulating the expression or properties of one or more gene products selected from the group consisting of AtIno80, At3g57300, Rvb1 (At5g22330), Rvb21 (At5g67630), Rvb22 (At3g49830), At3g57290, AtArp5.1 (At3g12380), AtArp5.2 (At5g56180), AtArp5.3 (At3g60830) and AtArp8 (At5g43500), their homologues, fragments or derivatives. In particular, the methods can be used to increase gene targeting.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/06757

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/415

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EMBL, BIOSIS, EPO-Internal, SEQUENCE SEARCH, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL/GENBANK/DBJ 'Online! "Arabidopsis thaliana putative helicase (At3g57300) mRNA, partial cds." retrieved from EBI Database accession no. AY080695 XP002254488 abstract	1,2
X	DATABASE EMBL/GENBANK/DBJ 'Online! 21 March 2002 (2002-03-21) "Arabidopsis thaliana cDNA clone:RAFL09-38-B21, 5'-end." retrieved from EBI Database accession no. AV829055 XP002254489 abstract	1-3



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Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL/GENBANK/DDBJ 'Online! 21 January 2000 (2000-01-21) "Arabidopsis thaliana DNA chromosome 3, BAC clone F2809" retrieved from EBI Database accession no. AL137080 XP002254490 abstract	1,2
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Y	see p. 541, 543-4	1-15
X	----- EBBERT RONALD ET AL: "The product of the SNF2/SWI2 paralogue INO80 of Saccharomyces cerevisiae required for efficient expression of various yeast structural genes is part of a high-molecular-weight protein complex." MOLECULAR MICROBIOLOGY, vol. 32, no. 4, May 1999 (1999-05), pages 741-751, XP002254486 ISSN: 0950-382X	6,15
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Y	----- GHERBI HASSEN ET AL: "Homologous recombination in planta is stimulated in the absence of Rad50." EMBO REPORTS, vol. 2, no. 4, April 2001 (2001-04), pages 287-291, XP002254487 April, 2001 ISSN: 1469-221X cited in the application see abstract, p. 287-8	1-15